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## CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

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SECURITY INFORMATION

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COUNTRY	East Germany	REPORT	
SUBJECT	Research and Development at Carl Zeiss, Jena	DATE DISTR.	2 September 1953
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A. Summary of developments 1946 - 1952.

1. The dismantling of Zeiss, carried out by the Russians at the end of the war, also resulted in the destruction of all scientific data and constructional drawings then in existence. The main task during the years 1946 - 1952 was, therefore, to replace the records and blueprints required for the resumption of production at the technical level achieved in 1945. It was also necessary to produce designs for a completely new set of test equipment to replace that which had been removed by the Russians. Moreover, since many of the firm's leading scientists had been recruited for work in the U.S.S.R., little original research was possible during this period.
2. By the end of 1952, these tasks had been largely accomplished, although it has not yet proved possible to replace all the test equipment lost and the factory still has to rely to a certain extent on equipment borrowed from various East German technical institutes. A further obstacle to specialized research has been that Zeiss was compelled by the Russians to concern itself during this period with various projects which lay outside its normal sphere of activity; for example, the manufacture of wire-drawing diamonds, bearing stones, and A-1 air gunnery trainers, for all of which the necessary designs had to be prepared by Zeiss itself.
3. The following new models were, however, designed during this period and are now (sic) in production:

Electronic microscopes (developed in collaboration with the Technical University, Dresden.)  
Polarization microscopes (with polarization filters)  
Reflecting microscopes  
Ultra-sonic exciters ("Ultra-Schall-Erreger")  
16mm sound film projectors  
"Documator" micro-reading equipment

25 YEAR RE-REVIEW

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Gear wheel testing equipment  
 "Biometer" and "Elektogon" lenses

4. Image measuring devices (that is, stereo-comparators, now in production and stereo-autocartographs, production of which is shortly to begin) are still based on pre-1945 designs.

#### Current Research

5. The head of research at Zeiss is Dr. Paul Goerlich, a specialist on semi-conductive cells ("Halbleiter Photozellen"), who succeeded Dr. H. Harting in the summer of 1952.
6. On Soviet instructions, the main effort since then has been directed towards infra-red and ultraviolet spectral research and the development of spectral photometers and spectrographs.

7. The following are the main laboratories:

#### The Crystal laboratory

A. This is the most important laboratory at Zeiss and is now engaged in the production of crystals for use in infrared spectral research. Work so far has been hampered by a shortage of large platinum crucibles<sup>1</sup>, which are no longer manufactured by the firms Degussa and Heraeus, who were formerly Zeiss's main suppliers. The first platinum crucible to arrive at Zeiss since the war was provided by VEB Quarzschmelze, Freiberg, in June 1952. Prior to this, the laboratory had been working with a single faulty crucible with a capacity of 1,000 cubic meters. The laboratory's current output is as follows:

- (1) Crystals for infrared and ultraviolet spectral research.

Sodium chloride  
 Potassium chloride  
 Caesium bromide (up to 39u)  
 Potassium bromide  
 Lithium fluoride  
 Caesium iodide (50u)  
 Potassium iodide  
 Barium chloride (10u)

- (2) Crystals for "piezoelectric effect"

Rochelle salt  
 Ethylene-diamin-tartrate  
 Synthetic quartz  
 (NH<sub>4</sub>) (2HPO<sub>4</sub>)

- (3) Other production

Fluorspar (for high grade micro-optics)  
 Polarization filters up to 15cm. diameter

- (4) Personalities

Dr. Rebentisch  
 Dr. Bittner  
 Fr. Dr. Meyer-Waldeck  
 Dr. Schreiner  
 Dr. Lapp

#### B. The cell laboratory

The head of the laboratory is Dipl. Ing. Hannstein. The sum of 1,200,000 DME has been allotted for the year 1952-1953 for research on photo cells. Current research is mainly concerned with the following:

Germanium  
 Caesium (Cs<sub>2</sub>Te)  
 Rubidium (Rb<sub>2</sub>Te)  
 Selenium

#### C. The measuring laboratory

The laboratory is at present attempting to develop:

- (1) An infrared spectral photometer, the design of which is based on the Perkins-Eimer infrared spectral photometer.
- (2) A Litterow-Eschelle spectrograph based on a design by Bausch und Lomb.
- (3) A photoelectric Raman (sic) spectrometer, a design by Bausch und Lomb.
- (4) A photoelectric Raman (sic) spectrometer, a design by Bausch und Lomb.

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(4) Personalities:

3.

Dr. Lukas<sup>2</sup>, Dr. Leiderer, and Dr. Hoffmann.

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D The microscope laboratory

This laboratory is working on a high grade metal microscope (Type Metaphoto) with high performance micro-lenses (Fluorspar lens system) (ein hochwertiges Metallmikroskop vom Typ Metaphoto einschliesslich hochleistungsfahiger Mikro-Optik (Flusspatlinsensysteme)).

Personalities:

Dr. Gause

Dr. Trapp

E The photographic laboratory (Dr. Zoellner)

The laboratory is working on the development of:

- (1) An ultra sensitive prismatic lens for aircraft cameras (Ein sehr lichtstarkes Wert-Winkelobjektiv fuer Luftbildkameras)
- (2) An ultra sensitive lens for short range infrared photography (Eine extrem lichtstarke Optik fuer die Infra-rot - Nahortungsgeraete).

F The astro laboratory (Dr Buegehold)

The laboratory is working on a 1m mirror for a "Schmidt" camera ordered by the Leningrad Observatory.

Comments:

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1. Possibly platinum lined crucibles

2. Dr. Lukas is head of the measuring laboratory.

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